

Consumptive Use of Water Reclamation and Reuse

November 2011



What is Water Reclamation and Reuse?

- **Treatment of wastewater to a quality suitable for the intended use (or reuse) of the reclaimed water**
- **Voluntary in VA but if implemented, must comply with regulations or guidelines that apply to the specific type of wastewater to be reclaimed**

Who regulates water reuse in Virginia?

DEQ – regulates the reclamation and reuse of domestic, municipal or industrial wastewater

VDH – provides guidelines on the reuse of gray water and harvested rainwater; regulates onsite sewage recycling for toilet flushing and other uses on an “experimental” basis

DCR – regulates the reclamation and reuse of storm water

Types of Reuse

- **Non-discharging** – irrigation, fire fighting & protection, toilet flushing, dust control, boiler feed, cooling, stack scrubbing, etc.
 - **Discharging**
 - Indirect reuse
 - Indirect potable reuse*
- * Direct potable reuse is prohibited

Principle factors driving water reclamation and reuse in the U.S. and Virginia

- **Population growth, particularly in urban areas**
- **Alternative to effluent point source discharges**

(EPA Guidelines for Water Reuse, 2004)

EPA TMDL for the Chesapeake Bay

- **Requires states with tributaries to the Bay to impose limitations on nutrient loads from point and non-point source discharges within the watershed of the Bay**
- **In Virginia – 3 primary ways to reduce nutrient loads from point source discharges**
 - **Nutrient credit exchange**
 - **Nutrient removal technology**
 - **Reduce discharge via non-discharging management / disposal options**

Non-Discharging Options

- **Land Treatment and Disposal**
- **Onsite Sewage Systems
(Conventional and Alternative)**
- **Water Reclamation and Reuse**
- **Others**

Consumptive Use of Water Reclamation and Reuse

- **Consumptive use can reduce instream flow and may impact downstream beneficial uses, particularly under low flow conditions**
- **Consumptive use is a particular concern in VA - > 90% of public water supply is from surface water withdrawals (2009)**
- **Water reclamation and reuse is consumptive where it does not return water back to the discharging WWTF that provided source water for this purpose**
- **Not all non-discharging water reuses are consumptive use (e.g., once through cooling, toilet flushing)**

Water Reclamation and Reuse Regulation (9VAC25-740)

- **Does not currently address consumptive use**
- **Process to amend regulation was initiated in January 2011 and RAP was assembled**
- **During RAP meetings, issues regarding consumptive use were raised and discussed**
- **Proposed amendments to the regulation include provisions to address consumptive use**

Proposed Regulatory Amendments to Address Consumptive Use

9VAC25-740-50. Exclusions and prohibitions.

B. Prohibitions. The following are prohibited under this chapter:

7. Reduction of the discharge from a VPDES permitted treatment works due to diversion of source water flow for reclamation and reuse such that the physical, chemical or biological properties of the receiving state waters are affected in a manner that would cause a significant adverse impact to other beneficial uses.

Proposed Regulatory Amendments to Address Consumptive Use

9VAC25-740-10. Definitions.

"Beneficial use" means both instream and offstream uses. Instream beneficial uses include, but are not limited to, the protection of fish and wildlife resources and habitat, maintenance of waste assimilation, recreation, navigation, and cultural and aesthetic values. The preservation of instream flows for purposes of the protection of navigation, maintenance of waste assimilation capacity, the protection of fish and wildlife resources and habitat, recreation, cultural and aesthetic values is an instream beneficial use of Virginia's waters. Offstream beneficial uses include, but are not limited to, domestic (including public water supply), agricultural uses, electric power generation, commercial, and industrial uses.

Cumulative Impact Analysis (CIA)

- **DEQ Office of Surface and Ground Water Supply Planning (OS&GWSP) would be responsible for performing the CIA**
- **Where the CIA determines that water reclamation and reuse could impact downstream beneficial uses under specific flow conditions in the receiving stream, impacts would be addressed through conditions of the permit**
- **Currently, DEQ OS&GWSP is not informed of a water reclamation and reuse project until the permit for the project has been issued**

Proposed Regulatory Amendments to Address Consumptive Use

9VAC25-740-100.B - requires general information submitted with an application for a permit

Proposed subdivision B.6 requires

- **Information needed to perform CIA**
- **Limited to VPDES permitted wastewater treatment works or the sewage collection system that proposes a new or increased diversion of source water to a reclamation system or SRS, respectively, for the production of reclaimed water**

Proposed Regulatory Amendments to Address Consumptive Use

9VAC25-740-100. B.6 - required information

- Latitude and longitude of the treatment works discharge location to a surface water or the SRS return discharge location in the sewage collection system
- Mean monthly discharge of the treatment works or the SRS for each month during the most recent 60 or more consecutive months at the time of application, or where this information is not available, estimated values of the mean monthly discharge for each month during a period of 12 consecutive months
- Maximum monthly diversion of source water from the treatment works to a reclamation system or from the sewage collection system to a SRS for each month during a period of 12 consecutive months

Proposed Regulatory Amendments to Address Consumptive Use

9VAC25-740-100. B.6 - required information (continued)

- Pertaining only to sewage collection systems that provide source water, the name of the treatment works at terminus of the sewage collection system
- Information specified in first 3 bullets for each increase in source water diverted by the treatment works or the sewage collection system to a reclamation system or SRS, respectively, among multiple increases to occur in planned phases, and anticipated dates of phased increases

Status and Remaining Steps of Regulatory Action

- Proposed amended regulation approved by SWCB on 8/4/11 to advertise for public comment
- **Now awaiting Executive Branch review and Governor's approval to advertise**
- 60-day public comment period for proposed amended regulation
- Final amended regulation will be prepared and will again require approval by SWCB, review by Executive Branch, and approval by Governor
- 30-day public comment period for final amended regulation; likely to go into effect thereafter

Questions?